

No. 607,723.

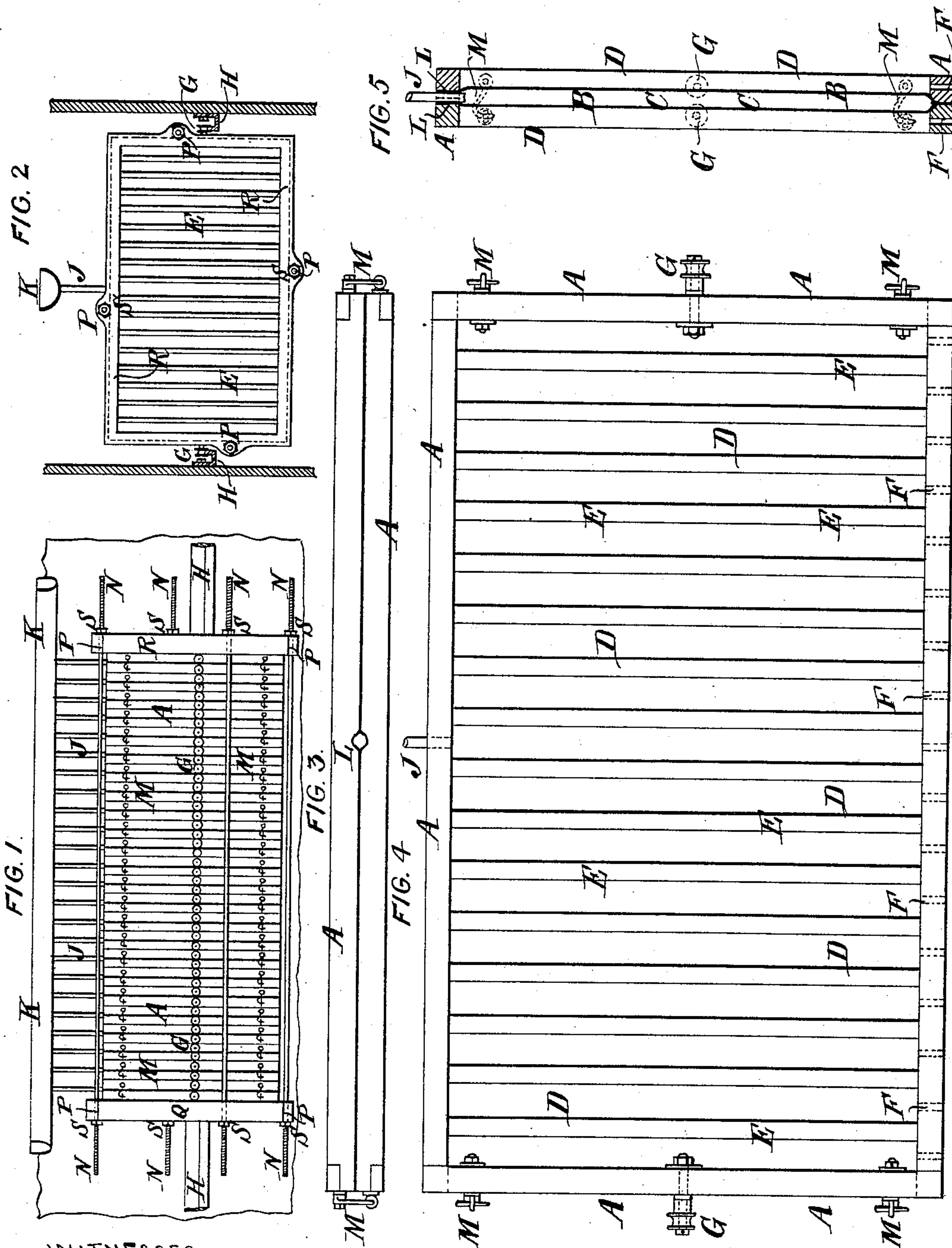
Patented July 19, 1898.

R. WILSON.

APPARATUS FOR SEPARATING LIQUIDS FROM GRANULAR MATERIALS.

(Application filed Dec. 10, 1897.)

(No Model.)



WITNESSES:

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# UNITED STATES PATENT OFFICE.

ROBERT WILSON, OF GOVAN, SCOTLAND.

APPARATUS FOR SEPARATING LIQUIDS FROM GRANULAR MATERIALS.

SPECIFICATION forming part of Letters Patent No. 607,723, dated July 19, 1898.

Application filed December 10, 1897. Serial No. 661,388. (No model.) Patented in England June 6, 1894, No. 10,956.

*To all whom it may concern:*

Be it known that I, ROBERT WILSON, a subject of the Queen of Great Britain and Ireland, and a resident of Govan, in the county of Lanark, Scotland, have invented certain Improvements in Apparatus for Separating Liquids from Pulverulent or Granular Materials, Seeds, and the Like, (for which I have obtained a British Patent, No. 10,956, dated June 6, 1894,) of which the following is a specification.

My said invention relates to operations in which liquids are separated from pulverulent or granular materials, seeds, and the like; and my object is to improve the process, to shorten the time and diminish the extent of apparatus required, and to avoid contamination of the materials by dust or other atmospheric impurities.

In carrying out my invention I employ a number of frames on which are distended diaphragms of cloth or other suitable material, and when a number of frames are combined there are formed spaces for receiving the mixed materials, alternating with spaces for water filtering through the diaphragms, means being also provided for filling the spaces, binding the frames together, and draining off the water, all as hereinafter described; and in order that my said invention and the manner of performing the same may be properly understood I hereunto append a sheet of explanatory drawings to be hereinafter referred to and showing my improvements.

Figure 1 on the accompanying sheet of drawings is a side elevation of my improved apparatus, Fig. 2 being an end elevation of same. Fig. 3 is a plan, Fig. 4 a side elevation, and Fig. 5 a vertical section, all drawn to a larger scale than Figs. 1 and 2, showing a pair of my improved frames combined together. In these drawings the same reference-letters are used to mark the same or like parts wherever they are repeated.

I employ a number of frames A, of wood or other suitable material and of any convenient size, on which are distended diaphragms B, of cloth or other suitable material or combination of materials, the arrangement being such that when the frames A are combined as

shown in Fig. 1 there are spaces C, Fig. 5, between pairs of the diaphragms B to receive the mixed materials, such spaces alternating with other spaces D, into which passes the water filtering through the diaphragms B. The latter, or, as they may be termed, "water-spaces" D, are crossed by wooden bars or strips E, which support the diaphragms B against the pressure of the materials, and the water-spaces are provided with bottom outlets F for draining off the water. Each frame A is provided with a small wheel G near the middle of each end, the wheels running on rails H to facilitate the movement of the frames A.

A number of the frames A are bound together by long bolts N, which pass through holes P in lugs formed on two metal end frames Q R, the ends of the bolts N being screwed and fitted with nuts S. When the frames A are in the position shown in Fig. 1 ready for being filled, the spaces C are connected by flexible or other suitable tubes J with a channel K, by which the mixed materials are led to the apparatus, and each tube J is inserted in a pair of half-round cavities L, formed in each pair of frames A.

When the mixed materials have been filled into the spaces C, the set of frames is left quiet for several hours to allow the water to drain off as much as it will do without the application of pressure or heat, or until the materials have become sufficiently solidified for being stoved and thoroughly dried, (where such treatment is desirable, as in the manufacture of starch, for example.) The long bolts N are next withdrawn, the end frames Q R and the supply-tubes J removed, and then each pair of frames A, held together by catches M, with the cake of starch or other material between, is placed separately in the drying-stove. (Not shown.)

What I claim as my invention is—

1. In apparatus for separating liquids from pulverulent or granular materials, seeds and the like, a series of open frames A, provided with cross-bars E and diaphragms B, the said frames being arranged in pairs to form a space C between the diaphragms of each pair, in combination with inlets J to such spaces C, all substantially as described.

2. In apparatus for separating liquids from  
pulverulent or granular materials, seeds and  
the like, a series of frames provided with dia-  
phragms and arranged in pairs to form spaces  
5 between the diaphragms, with inlets to the  
spaces and means for latching the two frames  
of each pair together, on removal from the ap-  
paratus, as and for the purpose described.

In testimony whereof I have signed my  
name to this specification in the presence of 10  
two subscribing witnesses.

ROBERT WILSON.

Witnesses:

EDMUND HUNT,  
DAVID FERGUSON.